


IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
SAN ANTONIO DIVISION

FILED

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CLERK OF DISTRICT COURT
WESTERN DISTRICT OF TEXAS
BY 

CURTISS-WRIGHT FLOW CONTROL CORP.,

Plaintiff,

vs.

VELAN, INC.

Defendant.

Civil Action No. 04-CV-1157 OG

**VELAN, INC.'S OPPOSITION TO CURTISS-WRIGHT FLOW
CONTROL CORP.'S MOTION FOR A PRELIMINARY INJUNCTION**

Defendant Velan, Inc. hereby opposes the Motion for a Preliminary Injunction of the Plaintiff Curtiss-Wright Flow Control Corp. For the reasons set forth herein Velan prays this Court will deny Curtiss-Wright's Motion on the merits and award Velan its attorney fees and costs if Curtiss-Wright persists in this motion and does not dismiss this case with prejudice.

I. Summary of the Argument

Curtiss-Wright is wrongfully attempting to enjoin Velan from engaging in activities that do not constitute any act of infringement. Curtiss-Wright asks the Court to enjoin Velan from offering to sell and selling its non-infringing bottom unheading device ("the Velan valve") for use in the delayed coker industry and from introducing and promoting that valve at an industry conference scheduled for April 18-21, 2005 in Houston, Texas.

First, Velan's valve does not infringe any valid claim of United States Patent Nos. 6,565,714 or 6,660,131 as a matter of law because it lacks a key element of every asserted claim, namely the ability to adjust the dynamic live loaded seat of the valve. To create some argument of infringement, Ruben Lah, the alleged inventor of the '714 and the '131 patents, and Curtiss-

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Wright have adopted an outrageous position on the meaning of the key claim term, “adjustable,” a meaning that is unequivocally contradicted not only by the disclosure in the patents, but also by simple common sense.

Second, Curtiss-Wright cannot point to any act of infringement that will or is likely to occur at the industry conference to be held in Houston. Infringement requires that an infringing product be made, sold, used, offered for sale, or imported. Product promotion is not an act of infringement. Therefore, Curtiss-Wright has no legal basis for asking the Court to enjoin the mere promotion of the Velan valve by Mr. Jose del Buey at a roundtable discussion where Mr. Lah, Mr. del Buey, and representatives from two other competitors, Zimmerman & Jansen and Enpro Systems, have been asked to speak.

Curtiss-Wright also alleges that Velan’s activities and allowing Mr. del Buey to speak at this conference will threaten its exclusivity in the marketplace. It fails, however, to mention that both Zimmerman and Enpro are marketing similar valves, at least one of which Mr. Lah stated at his deposition he believes is just as likely to infringe his patents as the Velan valve.

Yet another relevant factor is that Mr. Lah has cast doubt on the validity of his claims by admitting that every element of the asserted claims of his patents can be met by any number of prior art valves if they were merely adapted for use on coker drums.

A. Preliminary Injunction Is A Drastic And Extraordinary Remedy

A preliminary injunction is a “drastic and extraordinary remedy that is not to be routinely granted.”¹ A party must show a likelihood of success on the merits, irreparable harm if the preliminary injunction is not issued, that the balance of hardships tips in the movant’s favor, and

¹ *IntelCorp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1568 (Fed. Cir. 1993).

that the grant of the injunction has a favorable impact on the public interest.² Not all of these factors, however, are given equal weight.

II. Curtiss-Wright Cannot Show A Likelihood Of Success On The Merits

Regardless of the weight of any other factors, “a movant is not entitled to preliminary injunction if he fails to demonstrate a likelihood of success on the merits.”³ And when the party opposing such a motion raises a substantial question concerning infringement or validity, the injunction should not issue unless the movant can prove that the defense lacks substantial merit.⁴ Curtiss-Wright cannot, based on its outrageous position on the construction of a key term in the asserted claims of its patents, establish any likelihood of success in proving infringement. The Velan valve does not infringe the asserted claims of the Curtiss-Wright patents as a matter of law. Velan can also raise substantial questions concerning validity of the claims of those patents such that Curtiss-Wright cannot demonstrate that the invalidity defense lacks substantial merit.

A. **The Velan Valve Does Not Infringe Any Claim Of The ‘714 and ‘131 Patents**

Curtiss-Wright is currently asserting independent claims 14, 33, and 36 of the ‘714 patent and independent claim 11 of the ‘131 patent.⁵ All asserted claims are directed to a valve to de-head a coke drum, a system including such a valve, or a method using such a valve. Each of the claims further requires that the valve have a “dynamic live loaded seat.” Claims 14 and 33 of the ‘714 patent require an “*adjustable*, dynamic live loaded seat” while claim 36 of the ‘714 patent and Claim 11 of the ‘131 patent require a “dynamic live loaded seat” and at least one “live *adjustment* mechanism” for controlling the dynamic live loaded seat. The live-loaded seat of the

² *Nat’l Steel Car, Ltd. v. Canadian Pacific Railway, Ltd.*, 357 F.3d 1319, 1324-25 (Fed. Cir. 2004).

³ *Id.* at 1325.

⁴ *Id.*

⁵ Copies of the ‘714 and ‘131 patents were attached to Curtiss-Wright’s Motion as Exhibits A and B respectively.

Velan valve is not adjustable and does not have any “live adjustment mechanism,” therefore it cannot infringe any claim of the ‘714 or the ‘131 patents as a matter of law.

1. Background

The first step in assessing infringement requires that the Court determine the proper scope and meaning of the claim terms.⁶ In determining the meaning of claim terms, the Court looks to the plain and ordinary meaning of the terms in the context of the claims and in the context of the disclosure in the patent.⁷

To place the terms in proper context, the valves at issue have a valve opening and a sliding blind valve closure that can slide in one direction to close the valve opening and in the reverse direction to expose the valve opening. The sliding blind slides between two valve seats that surround the opening and seal against opposed sides of the sliding blind. Each valve seat is a metal ring. For purposes of this motion, the lower seat is a static seat which is static and fixed while the upper is a dynamic live loaded seat that includes biasing elements, that is spring elements, such as coil springs, resilient disk springs known as Belleville washers, or the like. The biasing elements apply a biasing or spring force onto the dynamic live loaded seat to bias or force that seat against the sliding blind valve closure such that the dynamic live loaded seat can accommodate deflections in the valve closure caused by heat or pressure during use. Biasing elements are selected for a particular application based on the predetermined conditions the valve will be exposed to and on the amount of force required to maintain a seal between the valve seat and the valve closure. For example, coil springs are available in a variety of sizes and materials and the inherent properties of each spring can be used to calculate the biasing force that spring will deliver at any given amount of compression. Normally, once the proper biasing element is

⁶ *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1998).

⁷ *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

selected and installed, it will not be changed except to replace worn elements with new elements during the course of routine valve maintenance every four years or more.

2. “Adjustable” Means The Biasing Force Of The Live Loaded Seat Can Be Changed While The Valve Is In Service During The Delayed Coker Process

All asserted claims of the ‘714 and ‘131 patents require a “dynamic live loaded seat” with a “live seat adjustment mechanism” or an “adjustable dynamic live loaded seat.” The key determination that establishes non-infringement is the meaning of the term “adjustable.” Curtiss-Wright has adopted a meaning that is unequivocally contradicted by the disclosure in the patents, and completely defeats critical aspects and objects of the alleged invention.

“Adjustable” in the context of the ‘714 and ‘131 patents means that the biasing force inherently provided by the biasing elements or coil springs integrated into a dynamic live loaded seat, can be adjusted to increase or decrease the biasing force during use. These changes can be done by an operator using one or more externally accessible “live seat adjustment mechanisms” to cycle those mechanisms thus increasing or decreasing the normal biasing force of the dynamic live loaded seat. Further, the patents require that the dynamic live loaded seat must be capable of adjustment during the process cycle while the valve is in use.

The ‘714 and ‘131 patents both refer to “a dynamic, live loaded seat having adjustable properties,”⁸ The term “adjustable” is used throughout these patents as a modifier of the term “dynamic live loaded seat” and must, therefore, provide some additional property or function not found in a regular dynamic live loaded seat. Every reference in the ‘714 and ‘131 patents that addresses any adjustability in the dynamic live loaded seat further refers to the necessity of

⁸ ‘714 patent, 10:28. Patent citations will be to the column and line numbers, thus 10:28 refers to column 10, line 28. All citations will be made to the ‘714 patent. Difference where the language between the patents differs, or is found in only one of the patents, will be clearly noted.

having a “live seat adjustment mechanism” associated with the dynamic live loaded seat.⁹ The stated purpose of the live seat adjustment mechanism is “to adjust and control the load exerted by the dynamic live loaded seat” on the valve gate or blind¹⁰ and is described as having:

“force applicator 142 that may be [mechanically or] manually adjusted depending on the amount and degree of force needed. In a preferred embodiment as shown in Fig. 10, force applicator 142 is simply a threaded member that may be rotated to increase or decrease the load on blind 106. Force applicator 142 is adjacent to and in contact with biased plunger 146. Biased plunger 146 has distal and proximate ends with the distal end being in direct contact with force transfer module 162. As force applicator 142 is activated to increase or decrease the load exerted on blind 106, biased plunger 147 is driven into force transfer module 162, which in turn exerts a resulting force on the dynamic live-loaded seat, or upper seat 34 as shown in Fig. 10, which in turn causes a resulting force to be exerted upon blind 106 at contact 36. As mentioned, seat retaining rings 126 are securely fixed and will not move, thus allowing wedged portion (force transfer module 162), which abuts seat retaining ring 126, to transfer force directly to blind 106 through the dynamic, live loaded seat. The force applied by dynamic, live loaded seat to blind 106 is directly proportional to the force applied by force applicator 142.”¹¹

Every embodiment of the live seat adjustment mechanism disclosed in the ‘714 and ‘131 patents functions in a similar manner using an externally accessible force applicator working in conjunction with a biasing element, for example, in the form of a set of Belleville washers. The set of Belleville washers apply a biasing force against the dynamic live loaded seat via the biased plunger. Adjustment of the force applicator adjusts the biasing force of the biasing elements to change the inherent biasing force of the dynamic live loaded seat against the sliding blind. Ruben Lah confirmed that every adjustment mechanism disclosed in the ‘714 and ‘131 patents have the wedged members to transfer the biasing forces to the dynamic live loaded seat described here.¹² The patents further explain that:

⁹ See Exhibit 1 to the Declaration of Mike Jacobs attached to this Opposition for representative examples.

¹⁰ ‘714 patent, 13:43-48.

¹¹ ‘714 patent, 14:30-50 and Figure 10. Bracketed language was added in the ‘131 patent.

¹² Parties currently have only the rough transcript for the deposition of Ruben Lah. Velan will gladly provide the court with point citations to the transcript when it becomes available.

“to increase the load on blind 106, the operator *simply* activates force applicator 142. To decrease the load on blind 106, the operator *simply* deactivates force applicator 142 as force applicator 142 is coupled to de-header valve 12 such that it may be cycled in and out to adjust the pressure or force exerted on blind 106.”¹³

And the purpose behind this ability to cycle the load in and out is to allow the operator to fine tune the dynamic live loaded seat during operation to “decrease the chances of unwanted leaks within the system. For example, if the system were leaking at one location, any one of, or multiple, dynamic seats could be adjusted to compensate and seal the leak.”¹⁴

As demonstrated above, the only additional function added to the dynamic live loaded seat by the term “adjustable” in the ‘714 and ‘131 patents is the ability of an operator to increase or decrease the inherent biasing force of the biasing elements of the dynamic live loaded seat through externally accessible live seat adjustment mechanisms while the valve is fully mounted to the coker drum and is actively involved in the delayed coker process. The term should thus be limited to this construction.

3. Curtiss-Wright’s Construction Of “Adjustable” Is Illogical And Contrary To The Specification

Contrary to the teachings of the ‘741 and ‘131 patents, Curtiss-Wright alleges that “adjustable” means “configurable for different load outputs” yet provides no support from the specification or the patent prosecution history for that construction.¹⁵ Curtiss-Wright then asserts that the Velan valve dynamic live loaded seat is adjustable because the springs of the seat can be removed and replaced.¹⁶ Mr. Lah also claimed that because the springs could be replaced they also constituted the live seat adjustment mechanism of the claims. This was his only basis for contending infringement.

¹³ ‘714 patent, 14:50-55 (emphasis added).

¹⁴ ‘714 patent, 15:33-38.

¹⁵ See Declaration of Ruben Lah, Exhibits 2 and 3 (attached to Curtiss-Wright’s Motion).

¹⁶ Lah Declaration, Exhibit 2 at 3.

The coil springs of the Velan valve dynamic live loaded seat are not accessible while the valve is mounted to a coker drum and would certainly not be accessible while the coker drum is in active use. In fact, as Michael Jacobs, Senior Designer for Velan has outlined in his attached Declaration, changing the springs on the Velan valve as Mr. Lah suggests would require that the entire Velan valve, weighing over 70,000 pounds, would have to be completely removed from the coker drum, disassembled, reassembled, and reinstalled.¹⁷ Further, Mr. Lah testified that while it would require at least nine hours to replace the springs, the Velan seat is adjustable because the springs *could* be replaced. But he was forced to agree that if the springs are replaced then the original springs are not being adjusted because they are no longer there.

In fact, the absurdity of Mr. Lah's interpretation is demonstrated by his assertion that the dynamic live loaded seat is adjustable even if the valve body were completely welded shut so the springs were totally inaccessible, requiring not only the total removal of the valve, but also cutting through thick, welded, metal surfaces to open the valve to change the springs.

The position adopted by Curtiss-Wright is also completely contradicted by the specifications of the '714 and the '131 patents. Complete removal, disassembly, reassembly, and reinstallation of valve weighing over 70,000 pounds and requiring a great deal of time, heavy equipment, personnel, money, and the necessity of disrupting the normal delayed coker process for over nine hours resulting in the loss of valuable lighter hydrocarbon fractions certainly cannot be contemplated by the language of the patents stating that:

"to increase the load on blind 106, the operator *simply* activates force applicator 142. To decrease the load on blind 106, the operator *simply* deactivates force applicator 142 as force applicator 142 is coupled to de-header valve 12 such that it may be cycled in and out to adjust the pressure or force exerted on blind 106."¹⁸

¹⁷ Exhibit A, Declaration of Michael J. Jacobs at paragraph 11.

¹⁸ '714 patent, 14:50-55 (emphasis added).

The process described by Mr. Jacobs in his Declaration and confirmed to be the process required to confer “adjustability” on the Velan valve is absurd and anything but “simple.” Further, it completely contradicts a critical aspect of the inventions, “to provide a more efficient, cost-effective, and safe coke drum de-heading device and system.”¹⁹

The Velan valve does not infringe any of the asserted claims of the ‘714 and ‘131 patents as it does not contain any way to adjust the dynamic live loaded seat after it is assembled. And Mr. Lah cannot make it an infringing device by taking a position on the term “adjustable” that defies logic and runs contrary to his own patents. As the Federal Circuit stated in *High Tech Medical*, “a device does not infringe simply because it is possible to alter it in a way that would satisfy all the limitations of a patent claim.”²⁰ In *High Tech* a rigidly mounted camera apparatus was found to not be “rotatably coupled” even though all that was necessary to cause the camera to rotate was to loosen two set screws.²¹ The Court stated, “[t]he fact that it is possible to alter the AcuCam so that it becomes ‘rotatably coupled’ to its housing is not enough” to establish infringement.²² Changing the coil springs in the Velan valve requires far more than simply loosening two set screws and Curtiss-Wright cannot make it otherwise. Therefore Velan does not infringe any asserted claim as a matter of law. This will further be the subject of Velan’s Motion for Summary Judgment of Non-Infringement to be filed next week.

B. Every Element Of The Asserted Claims Is Met By The Prior Art

Mr. Lah stated during his deposition that, as he claims in a further pending patent application, any known valve from a large number of valve families could be adapted to be used on a coker drum, it would simply be a matter of increasing the size of the valve and adapting the

¹⁹ ‘714 patent, 3:1-2.

²⁰ *High Tech Medical Instrumentation, Inc. v. New Image Industries, Inc.*, 49 F.3d 1551, 1555 (Fed. Cir. 1995).

²¹ *Id.*

²² *Id.*

mechanisms to operate in the coking environment. When asked to compare a valve illustrated in a 1980 Velan catalog with his asserted claims, he stated that every element of his claim existed in that valve except that the valve was not mounted on a coker drum. Additionally, a ball valve designed for use on the top of a coker drum disclosed in U.S. Patent No. 5,417,811 entitled "Closure Device for Upper Head of Coking Drums" that issued on May 23, 1995, almost six years prior to the filing of the '714 patent, shows that the claimed invention was not new.

In light of these admissions, Velan has raised a substantial question regarding the validity of the asserted claims of the '714 and '131 patents and Curtiss-Wright will not be able to prove that Velan's invalidity defense lacks substantial merit.

III. Curtiss-Wright Will Not Suffer Irreparable Harm

"Without a clear showing of validity and infringement, a presumption of irreparable harm does not arise in a preliminary injunction proceeding."²³ As demonstrated above, Curtiss-Wright cannot show a likelihood of success on the merits since the Velan valve does not infringe the asserted claims as a matter of law. Curtiss-Wright's claims that it will suffer irreparable harm if Velan is not enjoined rest on conclusory statements with no supporting evidence. "Without evidence of irreparable harm...conclusory statements regarding 'market share' and 'control of the patent' are entitled to little weight."²⁴ Curtiss-Wright offers no evidence establishing that it is the only company to offer a proven coke drum deheading valve and has captured over 20% of the U.S. coker deheading market. In fact, as stated above, Velan is not Curtiss-Wright's only competitor in the marketplace. Both Zimmerman & Jansen and Enpro Systems are currently marketing coker drum valves. Mr. Lah does not believe the Zimmerman valve infringes any claims of his issued patents, thus Zimmerman is already offering a non-infringing alternative.

²³ *Nutrition 21 v. U.S.*, 930 F.2d 867, 871 (Fed. Cir. 1991).

²⁴ *Alliance Research Corp. v. Telular Corp.*, 859 F.Supp. 400, 405 (Fed. Cir. 1994).

Curtiss-Wright relies on the strong aversion of the industry to risk operations on an unproven product to try and keep Velan from marketing its non-infringing, competing valve stating that “[t]he damage from that first installation, including a subsequent loss of market share, could never be fully undone.”²⁵ Mr. Lah, however, admitted that he believes Zimmerman has now installed a valve on a coker drum in Germany, thus establishing the allegedly critical “first installation.” Thus any possible harm that could have been done by Velan installing a valve has already been wrought by Zimmerman.

Curtiss-Wright’s conclusory statements about its market share, unsupported speculation about possible loss of market share, total lack of evidence to show that it is capable of meeting the demand for coker drum de-heading valves, and the existence of a competitor in the market place that has now achieved that critical first installation are all factors contradicting its claim of irreparable harm and arguing against the extraordinary remedy of a preliminary injunction.

IV. The Balance Of Hardships Strongly Favors Velan

Velan has invested hundreds of thousands of dollars designing its coker drum valve and every day the introduction of that valve is delayed is another day that Velan cannot capitalize on its substantial investment and begin recovering the costs incurred. Curtiss-Wright’s attempts to exclude Velan from the marketplace have already caused Velan a great deal of harm by forcing it to defend against a claim of infringement that that Curtiss-Wright could only assert by taking a position on claim construction so extreme that it defies logic, thus demonstrating that Curtiss-Wright had no good faith basis to file its claim and did so only to stifle fair competition.

V. The Public Interest Favors Competition

The public interest in protecting patent rights is counterbalanced by Velan’s continuing right to compete in the marketplace and given Curtiss-Wright’s utter failure to establish a

²⁵ Curtiss-Wright Motion at 8.

likelihood of success on the merits, Velan's right to compete is a legitimate interest that should be preserved.²⁶

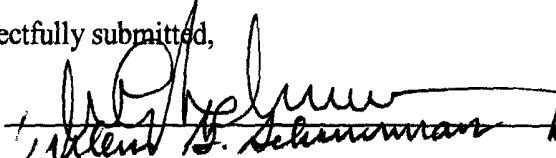
VI. Conclusion

Curtiss-Wright's failure to establish infringement and demonstrate any likelihood of success on the merits is fatal to its motion and its request for a preliminary injunction can be denied on that basis alone. Accordingly, Curtiss-Wright's Motion should be denied and Velan asks the Court to award its attorney's fees and costs for defending against this baseless motion.

Dated: March 31, 2005

Respectfully submitted,

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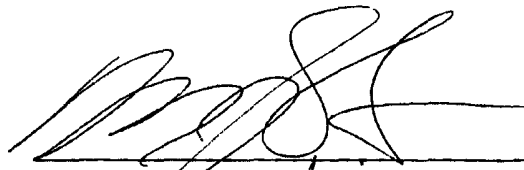
²⁶ See *Illinois Tool Works, Inc. v. Grip-Pak, Inc.*, 906 F.2d 679, 684 (Fed. Cir. 1990).

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing instrument has been served upon all counsel of record, via electronic delivery or facsimile on this the 31st day of March, 2005:

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Michael Smith w/ permission
by *RAK*

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Exhibit A

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
SAN ANTONIO DIVISION

CURTISS-WRIGHT FLOW
CONTROL CORP.,
Plaintiff,

v.

VELAN, INC.,
Defendant.

Civil Action No. SA-04-CA-1157 OG

DECLARATION OF MICHAEL J. JACOBS

I, Michael J. Jacobs, declare as follows:

1. I am the Coker Valve Senior Designer for Velan, Inc.
2. I have 15 years of experience in the design and manufacturer of valves for severe service and also for critical service applications. I have spent the last 12 years specifically concentrating on valves used for various applications in the Delayed Coker Industry and I am currently the Senior Designer of the Unheading Device (the Velan valve) currently accused of infringement in this case.
3. I understand that in order to determine whether a device infringes a patent the claims of the patent must first be interpreted to determine the meaning of the individual claim terms and then the interpreted claims must be compared with the device accused of infringement. I also understand that claim terms should be analyzed in light of the disclosure of the alleged invention found in the patent Specification. I further understand that in order to infringe a claim of a patent, the device accused of infringement must contain each and every element of the asserted claim.

4. I have analyzed the specification and claims of United States Patent Nos. 6,565,714 (the '714 patent) and 6,660,131 (the '131 patent), interpreted the claims of those patents being asserted in this case and compared those claims with the accused Velan valve.

5. Based on my analysis, I understand that the term "adjustable" as used in the '714 and '131 patents is used to further modify the term "dynamic live loaded seat" and that "adjustable" means that the live loaded seat must be capable of being adjusted by an operator during the coker process cycle using one or more externally accessible "live adjustment mechanisms" which can be cycled to either increase or decrease the normal biasing force inherent in a live loaded seat and, in particular, in the only disclosed adjustment mechanism the normal biasing force of the live loaded seat must be capable of being adjusted on a point to point basis.

6. This interpretation of the term "adjustable" is clearly supported by the Specification. I have attached as Exhibit 1 a listing of the various uses of the term "adjustable" and other phrases which relate to the use of that term as used in the '714 and the '131 patents. Further, according to the Specifications of the '714 and '131 patents, the only means of adjusting the dynamic live loaded seat disclosed is through a "live seat adjustment mechanism" described as follows:

"Live seat adjustment mechanism 134 itself comprises housing 138, which houses and holds the elements of live seat adjustment mechanism 134. Specifically, housing 138 has contained therein a force applicator 142 that may be manually adjusted depending on the amount and degree of force needed. In a preferred embodiment as shown in FIG. 10, force applicator 142 is simply a threaded member that may be rotated to increase or decrease the load on blind 106. Force applicator 142 is adjacent to and in contact with biased plunger 146. Biased plunger 146 has distal and proximate ends with the distal end being in direct contact with force transfer module 162. As force applicator 142 is activated to increase or decrease the load exerted on blind 106, biased plunger 147 [146] is

driven into force transfer module 162, which in turn exerts a resulting force on the dynamic live-loaded seat, or upper seat 34 as shown in FIG. 10, which in turn causes a resulting force to be exerted upon blind 106 at contact 36. As mentioned, seat retaining rings 126 are securely fixed and will not move, thus allowing wedged portion (force transfer module 162), which abuts seat retaining ring 126, to transfer force directly to blind 106 through the dynamic, live loaded seat. The force applied by dynamic, live loaded seat to blind 106 is directly proportional to the force applied by force applicator 142. Thus, to increase the load on blind 106, the operator simply activates force applicator 142. To decrease the load on blind 106, the operator simply deactivates force applicator 142 as force applicator 142 is coupled to de-header valve 12 such that it may be cycled in and out to adjust the pressure or force exerted on blind 106.

Force applicator 142 may be adjustable via manual means, such as a threaded bolt as shown, or via hydraulic or pneumatic means. One ordinarily skilled in the art will recognize the possible ways to apply pressure to force transfer module 162, while maintaining a seal."

'714 Patent Specification, Col. 14, lines 26-60 and '131 Patent Specification, Col. 17, line 50-Col. 18, line 24.

7. The '714 patent contains six independent claims and the '131 patent contains seven independent claims. Independent claims 14, 16 and 33 of the '714 patent all require an adjustable, dynamic live loaded seat. Independent claim 1, 18, and 36 of the '714 patent and independent claims 1, 11, 15, 16, 19, 20 and 23 of the '131 patent all require a dynamic live loaded seat and at least one "live adjustment mechanism." I understand that Curtiss-Wright is currently asserting claims 14, 33, and 36 of the '714 patent and claim 11 of the '131 patent.

8. Based on my interpretation, the Velan valve does not infringe any claims of the '714 or '131 patents as the accused Velan valve lacks at least one element of each of the independent claims.

9. The accused Velan valve does not contain any "live adjustment mechanism" or any other means of adjusting the inherent biasing force of the live loaded seat during the coking process. As described on page 9 of Velan's "Bottom Unheading Device for Delayed Coker

Applications” attached to the Declaration of Ruben Lah in support of Curtiss-Wright’s Motion for Preliminary Injunction, the upper seat is a live loaded seat as that term is commonly used in the industry. As stated under the “Seat Retainer Flange” section on page 9, this seat is live loaded through load rings held in place by the Seat Retainer Flange. These load rings are bias springs which apply a bias force onto the seat so that the seat is live loaded, and the seat can adapt to environmental and structural changes such as those experienced during the coking process. Final compression of the load rings to provide the selected bias force onto the seat is achieved through the final torquing of mating bolts that are used to bolt the Valve Body to the Coker Drum. Once installed, there is no mechanism to adjust load rings or the inherent biasing force provided by the live loaded seat through the load rings. Thus, the live loaded seat of the Velan valve does not have any way to adjust or change the normal biasing force of the live loaded seat, much less any way of adjusting the seat during the coking cycle, as required by every independent claim of the ‘714 and ‘131 patents.

10. Ruben Lah, inventor of the ‘714 and ‘131 patents, asserts that the live loaded seat of the accused Velan valve is adjustable because the load rings can be removed and replaced with load rings having a different biasing force. Changing the load rings requires, a very expensive, labor intensive, hazardous, and time consuming process. Changing the load rings on the accused Velan valve, a device weighing in excess of 70,000 pounds requires that the valve be completely removed from the coke drum, disassembled, reassembled, reattached to the drum, and then recertified for service, a process requiring a great deal of advance preparation, personnel, heavy equipment, time and money.

11. The accused Velan valve is mounted to the bottom of the coke drum and is further supported by four spring hangers that attach between the device and overhead structural supports

such as I-beams. The procedure to change the load rings of the Velan valve to make it a so-called "adjustable live loaded seat" as Mr. Lah requires for his unsupportable infringement allegations, includes the following steps:

- a. The coke chute, bolted to the bottom of the valve, is unbolted, lowered and secured in position
- b. An installation frame capable of supporting the full weight (over 70,000 pounds) of the valve is positioned under the valve;
- c. The installation frame is raised up, normally using heavy duty hydraulic jacks, to support the valve before it can even be disconnected from the coke drum;
- d. The adjustment nuts on the 4 spring hangers attaching the valve to the structure are turned to remove all preload force on the spring hangers, and the clevis pins are pulled, allowing most of the weight of the valve to be transferred onto the installation frame;
- e. The valve is unbolted from the coke drum (flange) by plant personnel manually removing the over 32 large and heavy hex nuts from the mating bolts. Once removed, the full weight of the valve is now transferred to the installation frame;
- f. The installation frame is lowered to lower the valve from the coke drum and is then moved sideways out from under the drum to allow access to the seat retainer flange located on the upper side of the valve;

g. Plant personnel manually remove over 16 socket head cap screws that hold the seat retainer flange to the valve body;

h. The seat retainer flange weighing over 2000 pounds is lifted from the valve body by overhead cranes and is moved aside to allow for access to the load rings;

i. Plant personnel manually remove and replace the more than 30 load rings with over 30 new and different load rings which have been selected to provide a different biasing force on the seat—insuring that each load ring is properly placed and aligned;

j. The seat retainer flange gasket located between the valve body and the seat retainer flange is replaced;

k. The seat retainer flange is moved into place and is lowered by means of the crane and is re-aligned with the valve body;

l. Plant personnel manually install and properly torque the over 16 socket head cap screws;

m. The installation frame is moved to reposition the valve back under the bottom opening of the coke drum;

n. The installation frame is raised to lift the valve back into place for final placement and re-attachment to the coke drum flange;

o. Each of the over 32 large hex nuts is reinstalled on the mating studs. Final torquing is accomplished in 20% increments meaning that each of the over 32 hex nuts must be manually torqued five times in the precise criss-cross pattern each time, a total of

over 160 individual manipulations, to ensure proper final torque and ultimate operation and reliability of the valve;

p. The four spring hangers are reattached to the valve by reinstalling the clevis pins and turning the adjusting nuts until the full valve weight is supported by the spring hangers;

q. The installation frame is lowered.

r. The installation frame is moved out from under the valve and returned to storage;

s. The valve is recertified for operation by shell and seat leakage testing the device.

t. The coke chute is raised back up to the bottom of the valve.

u. The coke chute is rebolted onto the valve.

12. The entire process outlined above would require, as Mr. Lah admitted during his deposition, at least 9 hours. A typical two-drum continuous batch delayed coking operation runs on a twenty four hour cycle meaning that the time available to decoke one drum is twelve hours since "while one drum is on-line filling up with coke, the other is being stripped, cooled, decoked, and prepared to receive another batch." '714 patent, Col. 7, lines 2-5. As Mr. Lah describes in the '714 and '131 patents:

"To decoke the drum, the heads must first be removed. Typically, once full, the drum is vented to atmospheric pressure and the top head (typically a 4-foot diameter flange) is unbolted and removed to enable placement of a hydraulic coke cutting apparatus. After the cooling water is drained from the vessel, the bottom

head (typically a 7-foot-diameter flange) is unbolted and removed. This process is commonly known as "de-heading" and can be a very dangerous procedure because of the size of the flanges, the high temperatures within the drum, potential falling coke, and other reasons as mentioned above. Once the heads are removed, the coke is removed from the drum by drilling a pilot hole from top to bottom of the coke bed using high pressure water jets. Following this, the main body of coke left in the coke drum is cut into fragments which fall out the bottom and into a collection bin, such as a bin on a rail cart, etc. The coke is then dewatered, crushed and sent to coke storage or loading facilities."

'714 Patent, Col. 7, lines 35-51. Further, after the drum has been decoked, it must be resealed and prepared to receive the next batch which also requires that the drum be warmed back up to approximately 350° F before the hot oil or resid can be introduced into the drum. The 9 hours required to replace the springs cannot be completed in the permissible time allotted during the normal coking process, and indicates that the delayed coker unit must be taken off line (shut down), whenever the spring force must be adjusted. Shutting down the coker unit causes a build up of residue in the fractionator and the loss of the valuable lighter fuel fractions normally obtained in the delayed coking process.

13. The procedure to change the load stacks that Mr. Lah claims somehow makes the Velan valve seat adjustable, is a huge, time-consuming and costly procedure which cannot possibly convert a valve seat which is not adjustable and in which the valve has no adjustment mechanism for adjusting the bias force on the valve seat, into an adjustable valve seat which can be adjusted simply and at any time merely by having an operator "activating the force applicator." It cannot be compared with the adjustable seats of the '714 and '131 patents. Further, the '714 and '131 patent specifications state that "force applicator 142 is coupled to de-header valve 12 such that it may be cycled in and out to adjust the pressure or force exerted on blind 106." '714 patent, Col. 14, lines 53-55. The ability to cycle the force applicator in and out, according to the '714 and '131 patents merely requires that "to increase the load on blind 106,

the operator simply activates force applicator 142 from outside the valve. To decrease the load on blind 106, the operator simply deactivates force applicator 142.” ‘714 patent, Col. 14, lines 50-53. In order to “cycle” the Velan valve as described in the ‘714 and ‘131 patents would require the 70,000 pound Velan valve to be completely removed, disassembled, reassembled, and reinstalled not just once, but twice: once to increase the load on the blind and again to subsequently decrease the load on the blind. Nothing in the use of the term “adjustable” in the ‘714 and ‘131 patents would suggest, nor would one of skill in the art reading those patents contemplate, that the word “adjustable” in relation to the dynamic live loaded seat, and that the “adjustment mechanism” for adjusting the live loaded seat, would encompass the very unusual, labor-intensive, hazardous, time-consuming and costly procedure that Mr. Lah’s current interpretation of “adjustable” and “adjustment mechanism” would require, and which directly contradicts the use of that term in the ‘714 and ‘131 patents and the clearly defined goal of the patents to “provide a more efficient, cost-effective, and safe coke drum de-heading device and system.” ‘714 patent, Col. 3, lines 1-2.

I declare under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, information, and belief. Executed the 31th day of March, 2005.



Michael J. Jacobs

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Exhibit A.1

Exhibit 1**Uses of the terms “dynamic” and “adjustable” in the ‘714 and ‘131 Patents**

Column and Line citations are in the form “Column:Line-Line”

Where cited language is nearly identical between the ‘131 and the ‘741 patents, words appearing in the ‘131 patent but not the ‘741 patent have been placed in single brackets; Words appearing in the ‘741 patent but not in the ‘131 patent have been placed in double brackets.

‘714 Patent	‘131 Patent	
Abstract		A live loaded seat assembly ... comprising a dynamic live loaded seat, a live seat adjustment mechanism coupled to the main body and designed to control and adjust the force and resulting seat load of the dynamic live loaded seat, and a force transfer module ... for transferring the force from the live loaded seat adjustment mechanism to the dynamic, live loaded seat.
	Abstract	The de-header valve is equipped with, among other things, a sliding blind that is contained and capable of moving within an upper and a lower seat, wherein one of such seats is a floating dynamic, live loaded seat that is capable of automatic adjustment through one or more loading zones...
3:61-63	4:51-54	wherein one of such seats is a dynamic, live loaded seat that is capable of [automatic] adjustment so as to seal the blind between the upper and lower seats.
4:32-40	5:22-30	a live loaded seat assembly ... and comprising a [floating] dynamic, live loaded seat, a live seat adjustment mechanism coupled to the main body and designed to control and adjust the force and resulting seat load of the dynamic, live loaded seat, and a force transfer module in juxtaposition to the dynamic, live loaded seat for transferring the force from the live loaded seat adjustment mechanism to the dynamic, live loaded seat.
4:53-61	5:44-52	The present invention further comprises a point to point sealing system comprising [[a plurality of loaded,]] independent, dual seats, [[preferably four,]]

		that seal directly against the gate. The seal consists of or is a result of the metal to metal seating between the upper and lower seats and the blind. Due to a dynamic, loaded upper seat, the amount of force required to properly seal the seats to the gate is accomplished using a live load seat adjustment mechanism designed to control the amount of force exerted on the blind.
5:41-51		Fig. 8 illustrates the workings of the live or dynamically loaded seat concept ...; Fig. 9 illustrates a detailed view of the dynamic, live loaded seat and the live seat adjustment mechanism; Fig. 10 ... of the dynamic, live loaded seat and live seat adjustment mechanism; Fig. 11 ... of the dynamic, live loaded seat and live seat adjustment mechanism.
	6:56-7:2	FIG. 11 illustrates the workings of the live or dynamically loaded seat concept; FIG. 12 illustrates a detailed view of the dynamic, live loaded seat and the live seat adjustment mechanism; FIG. 13 illustrates one embodiment of the dynamic, live loaded seat and live seat adjustment mechanism; FIG. 14 illustrates an alternative embodiment of the dynamic, live loaded seat and live seat adjustment mechanism; and FIG. 15 illustrates an alternative embodiment of the dynamic, live loaded seat and live seat adjustment mechanism, and specifically, the floating seat concept wherein the seat itself is biased.
9:4-5	12:1-2	Upper seat 34 and lower seat 38 are comprised of a dynamic, live loaded seat and a static seat,
9:9-16	12:6-13	In the preferred embodiment, the static seat is a one piece seat that is securely fastened to de-header valve 12 and is preferably non-adjustable. However, it is not without the scope of this invention that both the upper and lower seats could be dynamic and/or adjustable. In contrast to the static seat, dynamic, live loaded seat is a moveable and adjustable seat that is energized from without the process stream via

		live seat adjustment mechanism.
9:16-19	12:13-16	The function of the dynamic, live loaded seat is to provide point to point fine tuning of the system, and particularly the blind as it is sealed between upper and lower seats 34 and 38.
10:9-10	13:5-7	Also shown is upper seat 34, which is a dynamic, live loaded seat contained within flanged portion 42.
10:26-31	13:23-28	In addition, since upper seat 34 ... is a dynamic, live loaded seat having adjustable properties, blind 106 is a "floating" blind in the sense that it is biased as a result of the biased nature of dynamic, live loaded upper seat 34.
10:63-11:21	13:59-14:17	As discussed, blind 106 is supported on either side by upper seat 34 and lower seat 38, one of which is a [floating] dynamic, live loaded seat. As a result, and due to the nature of the coke manufacturing process in which the system is under extreme temperature and pressure, a large force must be applied to blind 106 from upper and lower seats 34 and 38, such that the system is substantially sealed and the pressure within the system maintained. Due to the existence of a dynamic, live loaded seat, de-header valve 12, and particularly the dynamic, live loaded seat, is capable of modulating any bowing in blind 106 that may exist during the coking process. In a normal coking process, extreme temperatures and pressures are present. Any variation in temperature between the upper and lower surfaces of the blind can cause the blind to bow. If the bowing is allowed to progress or continue, there is a danger in breaking the seal created between upper and lower seats 34 and 38 and blind 106, which could cause damage to the system and upset the manufacturing process. However, the ability of the present invention to adjust the load exerted on blind 106, utilizing the dynamic, live loaded seat and its adjustment mechanism, provides a way to compensate for or modulate any existing bowing that might occur. By increasing the applied load of the dynamic, live loaded seat on blind 106, the bowing is substantially

		eliminated, thus returning blind 106 to a more natural shape.
12:19-22	15:16-19	In addition, the metal to metal sealing allows the system, and specifically the sealing within the system, to be fine tuned as discussed below.
12:31-36	15:27-32	As such, there is a decreased chance of erosion to the finish of upper and lower seats 34 and 38, as well as decreased erosion potential. This becomes critical in that the present invention allows for fine-tuning of upper and lower seats 34 and 38 to more directly and precisely control sealing on a point to point basis against blind 106.
	16:51-60	Second, the dynamic, live loaded seat represents the floating seat concept, wherein the dynamic, live loaded seat is continuously loaded against the blind, meaning that the seat may fluctuate and adjust as needed to maintain a proper seal within the system and to provide the necessary forces needed to maintain the integrity of the blind and a uniform load on the blind. This floating seat concept may be accomplished using several configurations and materials. The following paragraphs discuss this concept in detail.
13:43-56	17:4-19	Live loaded seat assembly 132 is comprised of a [floating] dynamic live loaded seat, shown as upper seat 34, and a [at least one, and preferably four] live seat adjustment mechanism 134 used to adjust and control the load exerted by [[the]] dynamic live loaded seat upon flat surface 108 of blind 106. [One ordinarily skilled in the art will recognize that dynamic, live loaded seat may be positioned as upper seat 34 or lower seat 38.] Live loaded seat assembly 132 further comprises a force transfer module 162, ... as a wedged member, whose primary purpose is to transfer the load exerted by live seat adjustment mechanism 134 to the dynamic live loaded seat, which in turn exerts a resulting force upon flat surface 108 of blind 106. Force transfer module 162, or wedged member, is constructed having an angled section, which

		corresponds directly with a matching angled portion on the dynamic, live loaded seat.
13:63-64	17:26-27	As shown, upper seat 34 exists as a dynamic live loaded seat as described herein.
14:19-23	17:49-53	Fig. 9 [12] illustrates an enlarged view of live-loaded seat assembly 132 as shown in Fig. 8 [11]. Live-loaded seat assembly 132 comprises live seat adjustment mechanism 134, force transfer module 162, [working to interact with] [[and a]] dynamic live-loaded seat, which is shown in Fig. 9 [12] as upper seat 34.
14:26-43	17:57-18:7	Live seat adjustment mechanism 134 itself comprises housing 138, which houses and holds the elements of live seat adjustment mechanism 134. Specifically, housing 138 has contained therein a force applicator 142 that may be [mechanically or] manually adjusted depending on the amount and degree of force needed. In a preferred embodiment as shown in Fig. [13] 10, force applicator 142 is simply a threaded member that may be rotated to increase or decrease the load on blind 106. Force applicator 142 is adjacent to and in contact with biased plunger 146. Biased plunger 146 has distal and proximate ends with the distal end being in direct contact with force transfer module 162. As force applicator 142 is activated to increase or decrease the load exerted on blind 106, biased plunger 147 is driven into force transfer module 162, which in turn exerts a resulting force on the dynamic live-loaded seat, or upper seat 34 as shown in Fig. 10, which in turn causes a resulting force to be exerted upon blind 106 at contact 36.
14:43-55	18:7-19	As mentioned, seat retaining rings 126 are securely fixed and will not move, thus allowing wedged portion (force transfer module 162), which abuts seat retaining ring 126, to transfer force directly to blind 106 through the dynamic, live loaded seat. The force applied by dynamic, live loaded seat to blind 106 is directly proportional to the force applied by force applicator 142. Thus, to increase the load on

		blind 106, the operator simply activates force applicator 142. To decrease the load on blind 106, the operator simply deactivates force applicator 142 [[as]] force applicator 142 is coupled to de-header valve 12 such that it may be cycled in and out to adjust the pressure or force exerted on blind 106.
14:56-64	18:20-28	Force applicator 142 may be adjustable via manual means, such as a threaded bolt as shown, or via hydraulic or pneumatic means. One ordinarily skilled in the art will recognize the possible ways to apply pressure to force transfer module 162, while maintaining a seal. In addition, load bearing members may also be comprised of any suitable means capable of bearing a biased load and creating a loaded tension force upon force transfer module 162 and the dynamic, live loaded seat.
15:5-21	18:45-62	The biasing effect of the dynamic live-loaded seat results from the configuration of live seat adjustment mechanism 134. Specifically, [in one embodiment] live seat adjustment mechanism 134 comprises a series of biasing elements or load bearing members 150, such as belevue washers and springs 154 that act in conjunction with plunger 146. By biasing the dynamic live-loaded seat, any physical variations or deflections in blind 106 during the manufacturing process or the de-coking process will be absorbed through live-loaded seat assembly 132. This provides a significant advantage as it is not uncommon for blind 106 to go through various stages of deflection as a result of either pressure and/or temperature differentials. The biased nature of the dynamic live-loaded seat will allow de-header valve 12 to maintain a workable pressurized environment as well as to account for any physical or structural changes to de-header valve 12 as a result of the intense environment existing in the manufacturing process.
15:22-38		Although not shown, the present invention utilizes four independent sets of dynamic seats such that point to point adjustability is created within four

		<p>loading zones. These four loading zones significantly increase the ability to adjust and manipulate the de-heading system according to the pressure within the system and the potential locations for leaking. They also allow the use of components that need not be as true or smooth as those used with static seals. The four sets of dynamic seats could even be adjusted to the point wherein an amount of force is applied to the blind such that it is no longer moveable by the actuator. By allowing point to point adjustability, the system is capable of being fine tuned to decrease the chances of unwanted leaks within the system. For example, if the system were leaking at one location, any one of, or multiple, dynamic seats could be adjusted to compensate and seal the leak.</p>
	18:62-19:28	<p>Although not specifically shown, the present invention utilizes independent point loading zones to adjust and control the movement floating dynamic, live loaded seat. Preferably, there are four loading zones, each having its own independent live seat adjustment mechanism and force transfer setup. These live seat adjustment mechanisms are preferably arrayed, in an equidistant, at quadrants around the floating dynamic, live loaded seat and each comprise various adjustment and force applying means (such as the various embodiments described herein). Independent loading zones are advantageous in that they provide and allow for precise point to point adjustability to the dynamic, live loaded or floating seat within each of the loading zones. Specifically, these four loading zones significantly increase the ability to efficiently adjust and manipulate the de-heading system, and particularly the floating or dynamic, live loaded seat, according to the pressure and other extraneous conditions experienced within the system, as well as to account for and remove potential areas of breach where leaking may occur. These loading zones and independent points of adjustability also allow the use</p>

		<p>of components that are as true or smooth as would be required in conventional static seals. Each of the four loading zones provide such precise control, that they could even be adjusted to the point where such an extreme amount of force is applied to the blind such that the blind is no longer moveable by the actuator. By allowing point to point adjustability by independent setups, the de-header system of the present invention is capable of being fine tuned to decrease the chances of unwanted and potential breaches within the system. For example, if the system were leaking at one location, any one of, or multiple, live seat adjustment mechanisms could be adjusted to compensate for and seal the leak.</p>
	19:29-46	<p>FIG. 13 is illustrative of another embodiment of the live-loaded seat assembly 132. Live-loaded seat assembly 132 comprises live seat adjustment mechanism 134, force transfer module 162, and a dynamic live-loaded seat 34. As in the first embodiment, each of these elements works in conjunction with one another to apply and transfer force to surface 108 of blind 106, thus creating the necessary seal and de-heading function as earlier described. This embodiment comprises similar elements and similar functions as those shown and described in FIG. 12. However, this embodiment further comprises a full perimeter flexible inconnel bellow seal spring 180 placed between floating dynamic, live loaded seat 34 and seat retaining ring 126. This spring serves to provide process pressure assisted loading, which occurs as the process pressure within the system inflates the bellow seal spring and adds to the forces loading dynamic, live loaded seat and applying force to the blind.</p>
	19:51-60	<p>FIG. 14 is illustrative of an alternative embodiment of live-loaded seat assembly 132. Specifically, this embodiment comprises a series of o-rings 158 that are in place and utilized to help seal the system against leaks. Again, this embodiment comprises similar features and functions as those described in</p>

		FIG. 12, including force applicator 142, that may be used to increase pressure on force transfer module 162, which in turn exerts a proper pressure or force on the dynamic, live loaded seat, shown in FIG. 14 as upper seat 34.
	19:61-20:13	Finally, FIG. 15 illustrates yet another embodiment of the live loaded seat concept. Specifically, in this embodiment, live-loaded seat assembly 132 comprises heavy coil springs 200 arrayed at close centers around the perimeter of seat retaining ring 126. Coil springs 200 are specifically designed to provide a floating aspect to dynamic, live loaded seat 34. The advantages of the present invention are realized in the floating seat concept a taught herein. This advantage is carried out in this embodiment by biasing dynamic, live loaded seat 34 with coil springs 200. Specifically, dynamic, live loaded seat 34 is continuously loaded by applying an initial bias to dynamic, live loaded seat 34, through coil springs 200, which allows dynamic, live loaded seat 34 to essentially "float" between coil springs 200 and blind 106. It should be noted that coil springs 200 serve to operate in conjunction with the other elements and functions of live loaded seat assembly 132, which are similar in concept and operation to those discussed in FIG. 12, which elements also provide biasing characteristics to allow dynamic, live loaded seat 34 to "float."
	20:46-48	If pressure is leaking, the system may be adjusted in one of the many ways described above to compensate for and stop the leak.
16:9-11	20:57-59	an adjustable dynamic, live loaded seat coupled to the main body